

We claim:

1. A multilayer polymer-quantum dot light emitting diode comprising at least one quantum dot layer between a first polymer layer and a second polymer layer or an organic molecule layer.
2. The multilayer polymer-quantum dot light emitting diode of claim 1, wherein the quantum dot layer was formed using an aqueous suspension of quantum dots.
3. The multilayer polymer-quantum dot light emitting diode of claim 1, wherein the aqueous suspension of quantum dots is stable.
4. The multilayer polymer-quantum dot light emitting diode of claim 1, wherein the quantum dots are hydrophilic.
5. The multilayer polymer-quantum dot light emitting diode of claim 1, wherein at least one of the polymer layers comprises a low molecular weight compound selected from the group consisting of polyaromatics and polyheteroaromatics.
6. The multilayer polymer-quantum dot light emitting diode of claim 1, wherein at least one of the polymer layers comprises a high molecular weight compound selected from the group consisting of non-conjugated polymers and conjugated polymers.
7. The multilayer polymer-quantum dot light emitting diode of claim 1, wherein the first polymer layer comprises a hole conducting polymer.
8. The multilayer polymer-quantum dot light emitting diode of claim 1, wherein the second polymer layer comprises an electron conducting polymer.
9. The multilayer polymer-quantum dot light emitting diode of claim 1, wherein the organic molecule layer comprises an electron conducting organic molecule.
10. The multilayer polymer-quantum dot light emitting diode of claim 1, wherein the first polymer layer comprises polyvinyl carbazole (PVK).

11. The multilayer polymer-quantum dot light emitting diode of claim 1, wherein the second organic layer comprises tu-PBD.
12. The multilayer polymer-quantum dot light emitting diode of claim 2, wherein the quantum dots comprise a first element selected from Groups 2 and 12 of the Periodic Table of the Elements and a second element selected from Group 16.
13. The multilayer polymer-quantum dot light emitting diode of claim 2, wherein the quantum dots comprise a first element selected from Group 13 of the Periodic Table of the Elements and a second element selected from Group 15.
14. The multilayer polymer-quantum dot light emitting diode of claim 2, wherein the quantum dots comprise an element selected from Group 14 of the Periodic Table of the Elements.
15. The multilayer polymer-quantum dot light emitting diode of claim 2, wherein the quantum dots comprise an outer surface which is hydrophilic.
16. The multilayer polymer-quantum dot light emitting diode of claim 2, wherein the quantum dots comprise ZnS capped CdSe quantum dots.
17. The multilayer polymer-quantum dot light emitting diode of claim 1, wherein the second polymer layer was deposited by spin coating.
18. The multilayer polymer-quantum dot light emitting diode of claim 1, wherein the quantum dot layers are alternating layers of quantum dots that are soluble in aqueous solvents or organic solvents.
19. The multilayer polymer-quantum dot light emitting diode of claim 1, wherein at least one quantum dot layer is deposited on top of the second polymer layer.

20. The multilayer polymer-quantum dot light emitting diode of claim 1, which comprises alternating layers of quantum dot layers and polymer layers, wherein the quantum dot layers are soluble in aqueous solvents and the polymer layers are soluble in organic solvents.
21. The multilayer polymer-quantum dot light emitting diode of claim 1, wherein one of the quantum dot layers comprises quantum dots that are the same or different from quantum dots in another quantum dot layer.
22. The multilayer polymer-quantum dot light emitting diode of claim 1, wherein the first polymer layer comprises PVK, the quantum dot layer comprises an aqueous suspension of ZnS capped CdSe quantum dots, and the second polymer layer comprises tu-PBD that was deposited on the quantum dot layer by spin coating.
23. A method of making the multilayer polymer-quantum dot light emitting diode of claim 1, which comprises depositing the quantum dot layer on the first polymer layer and then depositing the second polymer layer on the quantum dot layer by spin coating.
24. The method of claim 23, and further comprising depositing the quantum dot layer as an aqueous suspension of quantum dots.
25. The method of claim 24, and further comprising making the aqueous suspension of quantum dots by making the quantum dots hydrophilic.
26. A device which comprises the multilayer polymer-quantum dot light emitting diode of claim 1.
27. A kit which comprises the multilayer polymer-quantum dot light emitting diode of claim 1 and instructional material.
28. A kit which comprises at least one reagent for making the multilayer polymer-quantum dot light emitting diode of claim 1 and instructional material.
29. The kit of claim 28, wherein the reagent is an aqueous suspension of quantum dots.